

# PHILOSOPHICAL

## TRANSACTIONS.

October 20. 1683.

### The C O N T E N T S.

1. *Historical Observations relating to Constantinople by the Reverend and learned Thomas Smith D. D. Fellow of Magdalen Colledge Oxon: and of the Royal Society.*
2. *An abstract of a Letter from Mr. Anthony Leeuwenhoeck of Delft, about Generation by an Animalcule of the male Seed. Animals in the Seed of a Frog. Some other observables in the parts of a Frog. Digestion & the motion of the blood in a Feavor.*
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*Historical Observations relating to Constantinople. By the Reverend and Learned Tho. Smith D. D. Fellow of Magd. Coll. Oxon, and of the Royal Society.*

**C**onstantinople, formerly *Byzantium*, was <sup>a</sup> by *Constantine* the great called so after his own name, who being mightily pleased with the beautiful and advantagious situation of the place between two Seas, and defended by narrow streights on both sides, removed the Seat of the Empire hither, and laid the foundation of its future splendor and greatness. It was also by a <sup>b</sup> special Edict or law of the same Emperour, which he caused to be engraven on a marble pillar, placed near his own statue on horse-back, in one of the Piazza's of his new built City called *Strategium*, where the Souldiers used to Mu-

<sup>a</sup> Κατὰ τὴν ἐπώνυμον ἡμεῖν πόλιν. So the Emperour Constantine in a Letter to Eusebius. de vita Constantini lib. IV. cap. 36. & apud Theodoretum Histor. Eccles. lib. 1. cap. 16. v. etiam Socrat. Scholast. Hist. Eccles. lib. 1. cap. 16.

<sup>b</sup> V. Socratem ibidem. Et Theophanem in Chronographia XXV. anno Constantini.

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iter, as in the *Campus Martius*, called *second or new Rome*, in emulation of old *Rome*, which he designed and endeavored this should equal in all things. Accordingly he endowed it with the same privileges and immunities, and established the same number of Magistrates, and orders of people, and divided the whole extent of it into fourteen Precincts or <sup>c</sup>Regions, according to the division of *Rome*. And the *Greek* writers were as elegant and extravagant in their commendations of it; but the usual title in their ordinary discourses and writings, when they had occasion to mention it without any flourish, was ἡ βασιλεύουσα or ἡ βασις, that is, the Imperial City, to the same sense with that of <sup>d</sup>Sidonius Apollinaris,

*Salve sceptrorum columen, Regina orientis,  
Orbis Roma tui.*

The country about it was afterwards called *Romania* in a limited and restrained sense, (for that *Romania* was anciently the same with *orbis Romanus*, seems clear from <sup>e</sup>*Epiphanius*) and the people Ρωμαῖοι. But I suppose this was not done till about the middle times of the Empire, when it began to decline. The *Greeks* still retain this name. For if you ask any of the *Greeks* born upon the continent of *Thrace*, what country man he is, he answers forthwith, Ρωμαῖος *Romios*, for so they pronounce it. The *Turks* in like manner call a *Greek* Christian *Urum Gavour*, or the Roman infidel, as they will call sometimes the Emperour of *Germany*, *Urumler Padisha* or Emperour of the *Romans*. Hence it was, that the latter Græcian Emperours styled themselves βασιλεῖς Ρωμαίων Kings of the Romans, that is, such as were born in *Romania*, and the other countries, which made up the Eastern division of the Empire. Tho per chance by this flourishing title they pretended a right to the Govern-

<sup>c</sup> The Italian word *Rome* is a manifest corruption of the Latin word.

<sup>d</sup> In Panegyrico, quem Romæ dixit Anthemio Aug<sup>to</sup>, bis Consuli.

<sup>e</sup> Hæresis LXIX. quæ est Arianorum. Sect. 2. where he says a fatal fire was kindled by *Arius*: πῦρ ἔ τοι τεχὴν ὃ κατείληφε πῶσαν τὴν Ρωμανίαν σχεδόν, μέγιστα τῆς αἰατοῦς πέμψεν, which seized almost upon all *Romania*, or *Univerſum Romanorum imperium*, as *Petavius* renders it, but especially the Eastern parts of it.

ment of the West: upon which vain presumption they assumed also the title of *Κοσμοκράτορες* or Emperours of the World, as if they had been the true Successors of *Augustus*, and the Western Emperors, Usurpers, whom they called by way of contempt and indignation, *Ράγες*, Reges, as<sup>f</sup> *Luitprandus* informs us in the account of his Ambassy to *Nicephorus Phocas*, and afforded the people of Italy no other title than that of *ἑ Longobards* or *Lombards*. The present Greeks call all the Western Christians *Λαῖνοι* or *φράγγοι* *Latins* or *Franks*, the Turks only making use of the latter, when they speak civilly of us, and calling *Christendome Phrenkistan*, in the present Greek *φραγκία*. The *Turks* now as proudly call *Constantinople Alem pena*, or the refuge of the World: where indeed seems to be a medly of all or most nations of three parts of it, and of all religions, which are allowed to be publicly profest and exercised every where throughout the Empire, except the *Persian*. For they look upon it as a corruption of, and deviation from the rules and doctrine of *Mahomet*, their great false prophet, and therefore absolutely forbid it, as repugnant to, and destructive of the doctrine of life and salvation, as they speak. And accordingly they condemn with all imaginable fury the Professors of it, who pretend to follow *Ali*, as Sectaries and Apostates, and entertain worse opinions of them, then of *Christians* or *Jews* or *Infidels*. The *Persians* are not behind hand with them in their hatred and disrespect, deriding them as gross and stupid, and looking upon them as little less then barbarous; interest and zeal for their several tenents heightning their differences so much, that in time of War they destroy one anothers *Moschs*. I remember, that there was a great discourse in *Constantinople* among the *Turks* concerning an impudent hot-headed *Persian*, who publickly in the new *Mosch* built by the Mother of the present Emperour, asserted that *Ali* was equal to *Mahomet*. But it seems he very luckily made his escape out of their hands, at which the Priests and the more zealous *Turks* were very much scandalized.

The *Greeks* have twenty six Churches within the walls of the

City, besides fix in *Galata* of which I have given an accompt else where. They have also two Churches at *Scutari*, one at *Kadikui* or *Chalcedon*. So at *Staurosis*, *Chingilkui*, and several other Villages upon the Asian shore of the Bosphorus, as at *Beşhiçtaş*, *Ortakui*, *Chorouch chesme*, which Church is dedicated to St. Michael the Archangel, *Jenikui* or *Neochorion*, *Therapia*, *Bujukdere*, and other Villages on the *European* side. They have also a Church at *Haskui*, where is their Burying place, and another near the *Bagno*, dedicated to St. *Parasceve*. And at *Tatoula* about a mile from *Pera*, upon a Hill, which from the name of the Church is thence called by the *Greeks* and *Franks*, St. *Demetrius* his Hill. Next to the holy Virgin, St. *Demetrius* and St. *George* have most Churches dedicated to them.

The *Armenians* have not, if I remember aright, above seven Churches; they being few in number in comparison of the *Greeks*.

The *Jews* may have in the City and places adjacent between twenty and thirty Synagogues, this being the greatest shelter of that accursed and contemptible people in the Grand Signors dominions, next to *Caire* and *Saloniki*: and I believe there may be about twenty or thirty thousand families of them. They are of great use & service to the *Turks*, upon accompt of their brocage and marchandise, and industry in several mechanical trades. All these I look upon as Natives, or Slaves rather, each paying money for his head every year. The *Jews* indeed very wisely collect this tax among themselves and according to an agreement made with the *Tefterdar* or Treasurer, pay a certain sum in gross for their whole nation residing there: by which piece of cunning they are great gainers, and spare the poor among them less able to pay, by a contribution of the rich to make up the sum. The *English* and *Dutch* Ambassadors have their Chappels in their Palaces common to their respective Nations.

The Churches and Chappels of the Western *Christians* of the *Roman* Communion in *Galata*, are

St. *Peters*, belonging to the *Dominicans*, where is the famous piece of *Madonna di Constantinopoli* as the *Italians* call it,

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or of the blessed Virgin, holding the holy child *Jesus* in her armes: which they pretend to be drawn by the hand of *St. Luke*, celebrated by some of the latter Ecclesiastical writers to have been a famous Painter. Out of respect to this idle tradition the credulous and superstitious *Latines* and *Greeks* of the *Roman* Communion shew great veneration to it, which otherwise hath little in it of proportion, art, or beauty to derive any reputation upon the designer, or upon his work.

*St. Francis*, belonging to the *Conventuali*, Fryars of the order of *St. Francis*: the ground of this by the wise conduct and intercession of *Cavaliere Molino*, the Venetian *Bailo*, after the surrendry of *Candia* upon the peace made by the Republick with the Grand Signor, was procured to be restored, and a handsome Church rebuilt with the large contributions of mony sent out of *Christendome*.

*St. Benedikt*, belonging to the *Jesuits*, where is a rich Altar curiously adorn'd with several figures in *Mosaick*. This Convent was purchas'd for them by their great Benefactor, *Henry* the fourth of *France*.

*St. Mary*, belonging to the *Observantines* or *Zoccolanti*, a branch of the order of *St. Francis*, so called from their going in *Zoccoli* or wooden clogs.

The *Capucines* have a little Chappel dedicated to *St. George*, hard by the *French Ambassadors Palace*.

*St. Ann*, a Chappel frequented by the *Perots*.

*St. Paul* and *St. Anthony*, were both taken away some years since from the *Christians*, and turned into *Moschs*. The former of which is now known by the name of *Arab Giamesi*, or the *Mosch* of the *Arabians*. Our Interpreters mentioned also to me the Church of *St. John*, which the *Turks* have seized upon for their use, *St. George*, which the *Jews* are possess of, and *St. Sebastian*, which was used to be visited cheifly on Holy days.

The North wind blows for the most part at *Constantinople*, which must be ascribed to its nearness to the *Euxine* sea, which bears that point from it. So that for want of a Southwardly wind ships have been forced to lye a month or two somtimes near the mouth of the *Hellespont*. This was taken notice of long since

by *Eunapius* in the life of *Ædesius*, who ascribes the seldome blowing of the *South* wind to the situation of the mountains, whereas it is checked and overpowered by the exuberance of the vapours continually sent forth from the *black* and *great Sea*, as the *Greeks* call it in comparision of the *Mediterranean*. Vide *ad finem Codini de origin. Constantinopol. Edit. Paris. pag. 80.*

The *Hellepont* is about forty miles in length, and at the Castles of *Sestos* and *Abydos* the streight may be about three quarters of an English mile over, or less.

The length of the *Propontis* is about a hundred and fifty miles, both shores may be seen in the middle of it. In it are,

*Cyzicus*, an Island near the *Asian* shore, to which it is joined by two bridges. It still retains its ancient name *Κυζικό*, and is the seat of a Bishop, being inhabited by a considerable number of *Greeks*.

*Proconnesus*, not far from the former; now, as for some centuries past, called *Marmora*, from the excellent quarries of Marble there found, the marmor *Cyzenicum* also being famous in the time of *Pliny*.

*Besbycus*, now called by the Greek *καλόλιμνο* or the good haven, not far from the entrance into the bay of *Montanea* to the North and by East. The *Turks* call it *Imramle*.

There are several Islands over against the bay of *Nicomedia*, formerly called *Sinus Astacenus*, according to *Strabo*, about six or seven leagues from *Constantinople* &c.

*Prote*, so called because they approach first to it, coming from *Constantinople*; to the South of this *Præncipe* and *Pytis*, which I take to be the same with *Pyrgos*, that lyes inmost toward the bay: *Chalcitis*, in modern Greek, *Chalce* or *Chalcis*. *Oxia* and *Platy* to the North-west. I have expressed the *Turkish* names of the lesser and uninhabited Islands elsewhere, which perchance were phantastically imposed by some *Franks*.

The *Seraglio* is at the extreme point of the North-east Angle of *Constantinople*, where formerly stood old *Byzantium*, within which towards the Haven is a stately *Kiosk* or summer house, from whence the *Grand Signor* usually takes Barge, when he pas-

ses into *Asia*, or diverts himself upon the *Bosporus*, at which time the *Bostangi bashi*, who hath the principal care of the Emperors palace, and hath the command of the *Bosporus*, sits at the helm and steers.

The seven Towers are at the South-east extremity.

The only Suburbs are to the North-west, along the Haven side; for above the hill, where the three walls begin, lies an open champaigne country, except that here and there at considerable distances farme houses are scatter'd.

The Haven runs in from the West, and so opens East.

At the East end of *Galata* is *Tophana* where they cast their great Guns.

*Pera* and *Galata* have about six gates to the Seaward. The whole tract of ground was anciently, before the times of the Emperor *Valentinian*, who enclosed and fortified *Galata* with walls and towers, styled Περαια or *Regio Peræa* being πέρα τῆς πόλεως, on the other side of the City to the North, which is the reason of its name, seated on higher hills, and whose ascent is more steep and difficult.

Our modern *Geographers*, such as *Mercator* and *Ortelius*, who herein follow *Ptolemy*, place *Constantinople* in the Latitude of 43. degrees and 5. minutes: the *Arabian* and *Persian Astronomers*, as *Abulfeda*, *Nassir Eddin*, *Vlugh Beigh*, and so the ἀστρονόμοι of *Chrysococcas* translated out of the *Persian* tables, place it more Northerly in 45. But by latter and better observation it is found, that they have erred in assigning the Latitude of this City, as of several other places. To salve these differences, there is no just ground of pretense to say, that the *Poles* are moveable and have changed their situation since their time, whereas it may better be imputed to their want of due care, or to their taking things upon trust, from the reports of *Travellers* and *Seamen*, not having been upon the places themselves: which certainly is to be said for *Ptolemy* whose observations, as to places more remote from *Alexandria*, are far from being accurate and true. The learned Mr. *John Greaves*, as I find in a manuscript discourse, very worthy of being printed, which he presented to the most Reverend and renowned

nowned *Arch-bishop Usher*, took the height of the *Pole* at *Constantinople* with a brass sextant of above 4. feet *radius*, and found it to be but 41. degrees. 6'. but by the observation we made in our Court-yard at *Pera* with a very good *Quadrant* we found it but 40. degrees and 58. minutes of North Latitude.

There is no place between the *Propontis* and the walls of the City, except just at the Seraglio-point, which may be two hundred paces in length; where they have raised on a platform a battery for great guns: but from the point to the end of the Haven West, the space to the gates is unequal in some places about twenty paces broad, in others three or four times as many more.

The distance between *Constantinople* and *Chalcedon* upon the opposite *Bithynian* shore may be about three or four miles.

In the walls are engraven the names of several Emperours, who reigned toward the declension of the *Græcian* Empire, as *Theophilus*, *Michael*, *Basilus*, *Constantinus Porphyrogenitus*, by whose care, and at whose expense the several breaches caused in them by the Sea or by earth-quakes were repaired.

*Kumkapi* or the sand gate lies toward the *Propontis*: this the *Greeks* call in their vulgar language *Κονδοσκάλι*, *Contoscalium*, or the little scale or landing place. Here formerly was an Arsenal for Gallies and other small vessels; it being a convenient passage over Sea. Over this Gate was anciently engraven a curious inscription still preserved in that excellent collection published by <sup>h</sup> *Gruterus*.

*Jedicula Kapi*, or the Gate of the seven towers, so called from its nearness to that *Acropolis*, is that, I guess, which the *Greeks* formerly called *χρυσή* or the Golden Gate, and by some late *Latine* writers *Chrysea*, in *Luitprandus*, *Carea*, by a mistake either of the transcriber or printer, for *Aurea*, for so certainly it must be mended. Over this Gate was this inscription,

*Hæc loca Theodosius decorat post fata Tyranni,  
Aurea seclagerit, qui portam construit auro.*

cited by *Sirmond* in his notes upon <sup>i</sup> *Sidonius*. This Gate is in



the twelfth Region, and was also called *ώραία* from its beautiful and curious structure.

The Gun gate formerly called *Roman* gate, not because it leads towards the continent of *Romania* or *Thrace*, but from <sup>k</sup> St. *Romanus*, where the last Christian Emperor was killed at the assault, which the *Turks* made to force their way into the City by it.

Near *Adrianople* gate is a fair large *Mosch* called *Ali-bassa*, upon a hill accounted the highest in the City.

The distance between tower and tower in the upper wall to the landward may be about ninety of my paces; the space between that and the second wall about eighteen paces over.

The place, where the *Lyons*, *Leopards*, and such like wild creatures are kept, ( where I saw also several *Jaskals* ) was formerly, as the *Greeks* told me, a Christian Church dedicated to *Παναγία* or the Blessed Virgin, where this verse is still legible,

Κατὰ Σκυθῶν ἔπιδους θέρμην ἐν μάχαις.

There is no tide or running back of the water on any side of the *Bosporus* into the black Sea, as <sup>l</sup> some have imagined, whose mistake might possibly arise hence, that the wind being at North, and blowing hard, the current sets more violently at such times against the several headlands jetting out into the channel, which admits of several turnings, and so the waters are forced back to some little distance: or else because when the South-wind freshens and grows boisterous, it makes a high rolling Sea in the *Propontis* and *Bosporus*, and being contrary to the current, gives a check to it, so that it becomes less sensible, and is easily stemmed. Where it is narrowest, the distance seems to the eye to be scarce a mile over from one shore to another; where broadest, not much above a mile and a half, unless where it runs into the deep bays, which by reason of their shallowness only harbour boats.

<sup>k</sup> Vid. Historiam Politicam Constantinopoleos apud Crusium in Turco-Græcia, pag. 9.

<sup>l</sup> This was an old error; for thus writes Dionysius Byzantinus in his little Book of the Bosporus. Τὸ βόμβον τὸ μὲν πλεῖστον κρηνοῖται ἐπὶ δὲ ὅτε κρητ' ἐπιχερτάται ἀνατρέφονται.

The channel certainly is natural and not cut by art, as some have idly fancied, not considering, how the *Euxine Sea* should discharge it self otherwise of those great quantities of waters, poured into it by the *Ister* and *Tanais*, now called *Don*, and the other rivers, whereby it becomes less salt, even very sensibly to the tast, than several parts of the *Mediterranean*.

The fish by a strange kind of instinct pass in vast shoales twice a year, Autumn and spring, through the *Bosporus*, that is, out of one Sea into another; of which the *Greeks*, who live several months of the year upon them, take great numbers, and supply the markets at easy rates; the *Cormorants* and other ravenous water-fowle, which the *Turks* will not suffer to be destroy'd or otherwise molested, preying also upon them.

The weather in some months is very inconstant, great heats and colds hapning the same day upon the change of the wind.

The winters at *Constantinople* are sometimes extraordinary severe. I have heard it related by several old *Greeks*, as a thing most certain, that the *Bosporus* was frozen over in the time of *Achmed*, and that a Hare was coursed over it. It hapned thus, that upon a thaw huge cakes of Ice came floating down the *Danube* into the black Sea, and were driven by the current into the *Bosporus*, where upon the return of the frost, they were fixed so hard that it became passable. In the year 1669 there was ice in the Haven to the great amazement of the *Turks*; and some were so frighted at this unusual accident, that they look't upon it as a dismal prodigy, & concluded, that the world would be at an end that year. The *Aguglia* or *Obelisk* in the *Hippodrome* is betwixt fifty and sixty foot high.

The Historical pillar in *basso rilievo*, raised in honour of the Emperors *Arcadius* and *Honorius*, may be in height about an hundred seven and forty feet.

*Alexius Comnenus* lies buried in the Patriarchal Church against the wall, and his daughter *Anna Comnena*, the Historian, who lived about the year of Christ 1117. They preteed to shew there the reliques of St. *Anastasia*, who suffered Martyrdome under the Emperor *Valerianus*, and of St. *Euphemia*, Virgin and Martyr, who lost her life most gloriously for *Christs* holy religion at *Chalcedon* under *Diocletian*.

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In *Sancta Sophia* there are pillars so great, that a man can scarce fathom them at twice. At the end of the Gallery, that joyns the other two, each about thirty of my paces wide, there is a piece of transparent Marble, two or three inches thick. In the North gallery upon the pavement is a reddish sort of a marble stone, brought, as the *Turks* and *Christians* relate, from *Palestine*, on which they fable, that the Blessed Virgin used to wash the linnen of our Saviour.

I observed but one step from the body of the Church to the *Bema* or place where the Altar formerly stood.

The great *Mosch* at *Chasim-bassa* on *Pera* side to the west was formerly a Church dedicated to St. *Theodosia*.

*Gianghir*, a *Mosch* so called upon a hill at *Fondaclee* near *Tophana*.

In *Constantinople* there are several narrow streets of trade, closed up with sheds and pent-houses, which I suppose were in use before the *Greeks* lost their Empire, and are the same with the *σκαπτοὶ καὶ πεντοὶ σπύραι* in *Chrysoloras* his <sup>m</sup> Epistle. But besides these places, several trades have their distant quarters. The streets are raised for the most part on each side for the greater convenience.

Not far from *Suleimania* is the house of the *Aga* or General of the *Janizaries*, which so often changes its masters.

*Pompeys* pillar, as the *Franks* erroneously call it, is of the *Corinthian* order, curiously wrought, about eighteen foot in height and three in diameter.

*Beshiktash*, a village within three or four miles of *Constantinople* towards the *Bosporus*, where lies buried the famous pyrate *Ariadin*, whom the *Christian* writers call *Barbarossa*, who built here a handsome *Mosch*, having two rows of pillars at the entrance. The Captain *Bassa* usually, before he puts to sea with his Armata of Gallies, visits the Tomb of this fortunate robber, who had made several thousand *Christians* slaves, and makes his prayers at the neighbouring Church for the good success of his expedition.

They reckon in the City above a hundred publick baths, every street almost affording one. They are esteemed works of great Piety and Charity, there being a continual use of them, not only upon the accompt of religion, but of health and cleanliness. For their dyet being for the most part hot spiced meats in the winter, and crude fruits in the summer, their liquor fountain water, or Coffee, to which we may add their lazy kind of life ( for walking is never used by them for digestion, or otherwise in the way of diversion ) frequent bathing becomes necessary.

There are several receptacles of water under ground, and one particularly under the Church of *Sancta Sophia*, as I was informed; but I did not think it worth my curiosity to descend into it. These were of great use to the poor *Greeks* in the last fatal siege; but the *Turks* are so secure, that they do not think, that they deserve either cost or pains to keep the waters sweet, or the cisterns in repair.

The *Aquæducts*, which answer to those glorious *Aquæducts*, near *Pyrgos*, and convey the water to the great cistern near Sultan *Selims* Mosch, are in that part of *Constantinople*, which lies between the Mosch of *Mahomet* the Great and *Sha zade*.

The *Turks* began to besiege *Constantinople* on the fifth of *April*, and took it the twenty ninth of *May* on *Whitsun Tuesday* morning 1453. or as the *Turks* reckon in the year 857. of the *Hegira*, or flight of *Mahomet*, the 22. day of the first *Jomad*.

The Chappel, where *Ejub Sultan* is interred, at whose head and feet I observed great wax candles, is enclosed with latten wire grates, for the better accommodation of such religious *Turks*, as come to pay their respect to the memory of this great *Musulman* Saint. In the middle of the Area there is raised a building sustained by excellent marble pillars, ascended by two several pair of stairs, where the new Emperor is inaugurated, and where he usually goes in *Biram* time.